KURTIS & ASSOCIATES, P.C.

Report to the Federal Communications Commission on Carrier Efforts Toward Attaining Digital TTY Accessibility, and the Status of the Various Technological Solutions, as Provided by CC Docket No. 94-102, In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems

Northwest Missouri Cellular Limited Partnership ("Northwest Missouri"), by its attorneys, pursuant to the Federal Communications Commission's ("Commission") *Fourth Report and Order* in CC Docket No. 94-102,[1] hereby files a Quarterly Report for the quarter ending June 30, 2002, reporting that Northwest Missouri's digital wireless network is capable of transmitting 911 calls using text telephone ("TTY") devices, and as such, Northwest Missouri is compliant with Commission Rule 20.18(c). Northwest Missouri now files this instant report.

I.   Carrier Background

Northwest Missouri provides analog and digital TDMA CMRS wireless service in the Missouri 1-Atchison RSA.[2] Northwest Missouri does not own its own switch. Rather, Northwest Missouri obtains switching services from Cingular Wireless LLC's ("Cingular") switch in Kansas City, Missouri to switch Northwest Missouri's Lucent Technologies Inc. ("Lucent") TDMA infrastructure cell site equipment. The TTY compliant software and hardware is hosted on the Cingular host switch and not on the network infrastructure owned and operated by Northwest Missouri. As noted in its past quarterly reports,[3] Northwest Missouri was previously advised by Cingular and Lucent that TTY compliant infrastructure equipment was hosted on the Cingular switch by December 31, 2001. Northwest Missouri now reports that it has been advised by Cingular and Lucent that the Northwest Missouri network was compliant with Commission Rule 20.18(c) by June 30, 2002.

II.   Access to 911 Through TTY Devices

A.   Development Activities

Throughout the quarterly reporting period, Northwest Missouri has inquired of both Cingular and Lucent regarding the status on their progress in achieving full compliance with the Commission's rules for the Northwest Missouri infrastructure. In response to Northwest Missouri's most recent inquiry on the status of the Cingular host switch being digital TTY

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[1]In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Fourth Report and Order*, CC Docket No. 94-102, 15 FCC Rcd 25216, 65 Fed. Reg. 82293 (December 28, 2000), ("*Fourth Report and Order*").

[2]Station KNKN816 (CMA504B).

[3] Prior to this instant report, Northwest Missouri filed a total of five quarterly reports with the Commission. (April 15, 2001, July 15, 2001, October 15, 2001, January 15, 2002, and April, 15, 2002.)

compliant, Cingular advised Northwest Missouri that Cingular is fully compliant with the TTY 911 requirement and that the TTY feature was successfully installed and tested in the Lucent infrastructure used by Northwest Missouri before June 30, 2002. Further, Lucent had previously advised Northwest Missouri that it installed on the Cingular host switch its Lucent TTY feature for TDMA cellular infrastructure of the same type and standard as the TTY feature that Lucent had field-tested and approved prior to June 30, 2002.[4] Lucent's most recent public response is appended hereto as **Exhibit A** Cingular's most recent public response is appended hereto as **Exhibit B.** Northwest Missouri is not capable of independently verifying the information presented, but has no reason to believe that it is not accurate. Based on Lucent's installation of TTY features on the Cingular host switch of the same type and standard as the TTY features Lucent field-tested and approved, and further, based on Cingular's report to Northwest Missouri of successful install and testing of the Lucent TTY feature on the Cingular host switch, Northwest Missouri believes it is compliant with Commission Rule 20.18(c).

While Northwest Missouri provides service to a number of brands of certified handsets owned by its subscribers and roamers entering its market, Northwest Missouri's primary handset providers for subscriber equipment sold by Northwest Missouri are Nokia and Motorola, Inc. ("Motorola"). Northwest Missouri has not yet had access to any TTY-compatible handsets, but it has requested that Nokia and Motorola provide information on their progress in releasing commercially available TTY-compatible TDMA handsets. Motorola's response is appended hereto as **Exhibit C**. Northwest Missouri is not capable of independently verifying the information presented therein, but has no reason to believe that Motorola's response is not accurate. Northwest Missouri has not yet received a detailed response directly from Nokia, and therefore cannot report on its development activities. In the past, however, Nokia provided this information directly to the Commission in its own quarterly report. Northwest Missouri presumes that Nokia will follow the same procedure for this quarter. The appended Motorola information is respectfully submitted in response to these issues, as required in the Commission's *Fourth Report and Order* (rel. Dec 14, 2000).

(1)   Network Infrastructure Software Development
(2)   Handset Development and Testing Plans
(3)   Beta Testing and Lab Testing
(4)   Release and General Availability to Carriers of Network Infrastructure Software
(5)   Availability to Carriers of Full Acceptance Test Units
(6)   Efforts Toward Achieving Digital Wireless Solution Compatibility With Enhanced TTY Devices

Northwest Missouri has been advised that its digital network, as presently operating, meets the FCC's requirements for TTY compatibility.

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[4] *See infra*, Lucent CDMA TTY/TDD Regulatory FAQ/RFI, app.

B.   Testing and Deployment Activities

Northwest Missouri has not had access to TTY-compliant TDMA handsets. With regard to item 7 however, Northwest Missouri has communicated with the Missouri 911 Administrator, to advise that Office that Northwest Missouri's digital network supports TTY calls made using a TTY-compatible TDMA handset. Northwest Missouri is not responsible for, nor has any control over, the public safety community obtaining digital TTY-compatible equipment. Nonetheless, while it has no obligation to do so, Northwest Missouri has made the public safety community aware that the TTY Forum (through ATIS) offers a diagnostic test to determine if a PSAP's equipment is digital TTY-compatible.[5] With regard to item 8, Lucent successfully concluded all necessary testing of the Cingular host switch, and Cingular has specifically advised Northwest Missouri that the TTY feature was successfully installed and tested in the Lucent infrastructure used by Northwest Missouri. Northwest Missouri has requested information from its primary handset providers with respect to Item 9. Motorola's response is appended hereto as **Exhibit C.** In response to item 10, the information set forth herein is applicable throughout the Northwest Missouri network where digital service has been deployed.

(7)   Carrier Coordination of Testing With PSAP

(8)   Carrier Testing Activities, Including Field Testing, Consumer End-to-end Testing, and Other Necessary Tests

(9)   Retail Availability of Necessary Consumer Equipment

(10)   Geographic Scope of Network Infrastructure Deployment

III.   Conclusion

Northwest Missouri has been advised by Cingular and Lucent that, based on software and hardware in the Cingular host switch, Northwest Missouri is in compliance with the June 30, 2002 deadline under 20.18(c), to make its digital network capable of transmitting 911 calls from TTY devices. Accordingly, no further quarterly reports will be filed by Northwest Missouri.

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[5] The diagnostic test can be found on the Alliance for Telecommunications Industry Solutions ("ATIS") webpage, www.atis.org, at TWIP (TTY Wireless Inter-Operability with PSAP TTY) Test, last checked on July 8, 2002.

Respectfully Submitted,

Northwest Missouri Cellular Limited Partnership

Dated: July 15, 2002   /S/ Anna E. Ward

Michael K. Kurtis
Anna E. Ward

Its Attorneys

Kurtis & Associates, P.C.
1000 Potomac Street, N.W.
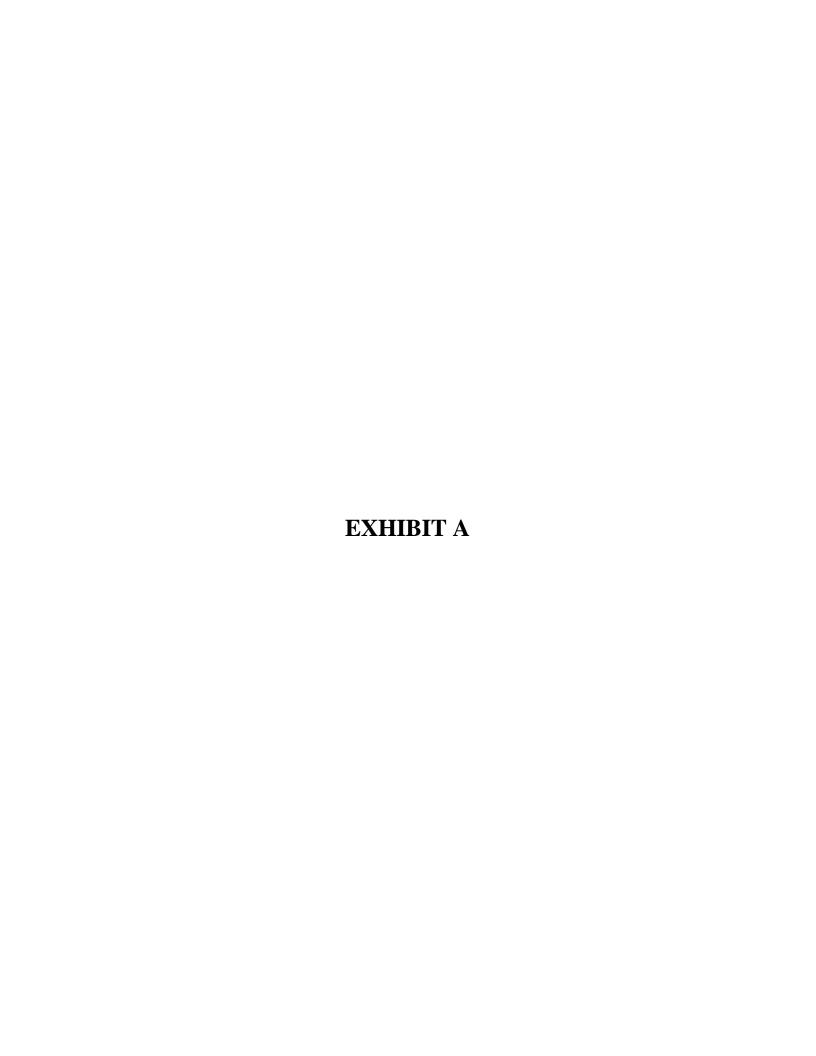Suite 200
Washington, D.C. 20007
(202) 328-4500

EXHIBIT A

Lucent Technologies
Bell Labs Innovations

March27th, 2002

Re: Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911
Emergency Calling Systems, CC Docket 94-102, TTY Compatibility with Digital
Wireless Systems

Lucent Technologies Inc. is happy to announce that TTY/TTD for CDMA and
TDMA is now generally available (GA).

TTY/TTD for CDMA and TDMA have field-tested and now FOA complete. The TDMA
version of feature was tested in May 2001 in Telecorp Little Rock, Arkansas market.
The CDMA version of feature was tested in October 2001 in Verizon Jersey City NJ
Market.

Lucent is proud of this great development for TTY solutions. If you have any
questions, please contact me at (630) 979-8845.

Sincerely,

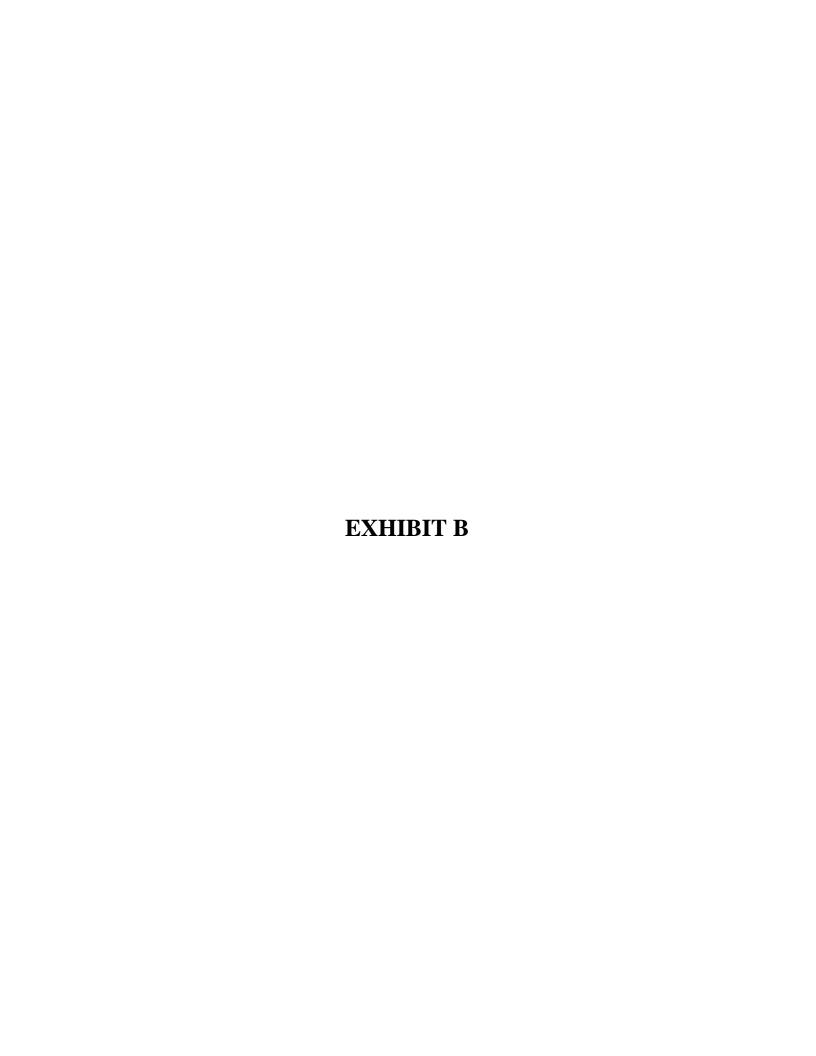Curtis A Miller
Sr Mgr Network Product Mgmt

EXHIBIT B

April 8, 2002

To: **TTY Forum**

From: **Susan Palmer and Ken Evans**

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TTY Forum #21 Report
Cingular Wireless LLC

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Overview

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Cingular Wireless LLC (Cingular) notes that progress with ATIS coordinated testing of the TTY solutions continues.   Cingular has participated in this testing in GSM, CDMA and TDMA environments. The first testing of GSM technology was a cooperative venture conducted by ATIS in Cingular's California GSM market in February. This interoperability testing involved multiple carriers around the country and included all access technologies (GSM, TDMA and CDMA).

Results from testing from a mobile to mobile and mobile to landline environments indicate a total character error rate at an acceptable level -- less than 1%. However, testing with **some** PSAPs indicate an unacceptable character error rate. This is a serious problem. ATIS has identified over 36 vendors of PSAP equipment including TTYs, software TTYs and PSAP software that can impact total character error rate. Research is on going to determine the extent of the problem and to identify solutions.

Manufacturers have provided TTY compatible handsets for testing and as of this date, Cingular has tested handsets from all three of its' handset vendors with good results.   However, these have been in limited numbers and availability of handsets is still a concern for commercial launch.

Cingular is conducting testing of the TTY solution with deaf and hard of hearing TTY users. This testing is being conducted to identify usability issues and to confirm that the necessary network, handset and customer interface issues are in place.

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ERICSSON

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TMDA: The TTY software was given general availability (GA) status on December 1, 2001. On March 4, 2002, Cingular received a software patch from Ericsson. This patch is expected to help resolve the error rate issue that is seen when calling certain PSAP equipment. It was loaded into one of our commercial switches on March 11 for evaluation. Initial results indicate the patch has resolved the error rate issue with one PSAP vendor. However, testing will

be required with all know PSAP vendors to insure compatibility. Deployment of TTY software in the Ericsson switches in our network will be completed in April 2002. The June 30, 2002 deployment requirement is on track.

GSM: Testing has been completed in our Pleasanton Laboratory. A first office application (FOA) was successfully completed on January 19, 2002 in Pleasanton, California. Successful interoperability testing was conducted with TDMA and CDMA technology on this switch in February 2002. Installation of the TTY functionality will complete in late April 2002. The June 30, 2002 deployment requirement is on track.

NORTEL

GSM: Nortel GSM continues to be an area of concern. Testing is scheduled for May 6, 2002, with a GA date of May 17, 2002. This is only six weeks prior to June 30, 2002 when the FCC requires that we have TTY implemented. Unforeseen problems identified in testing could place our ability to meet the June deadline in jeopardy. If Cingular does not receive the upgrades from Nortel as scheduled and is unable to conduct testing as scheduled, it will not be possible for Cingular to meet the June deadline in these markets.

TDMA: Cingular has the necessary software for the TTY solution. However, this software cannot be used until Cingular completes planned switch upgrades from "MTX - 9" to "MTX - 10". This upgrade is scheduled to complete in early April 2002.

LUCENT

The Lucent TTY solution has been installed in all Lucent switches and testing to date has yielded good results. We have met the December 31, 2001 date and are on track for the June 30, 2002 date.
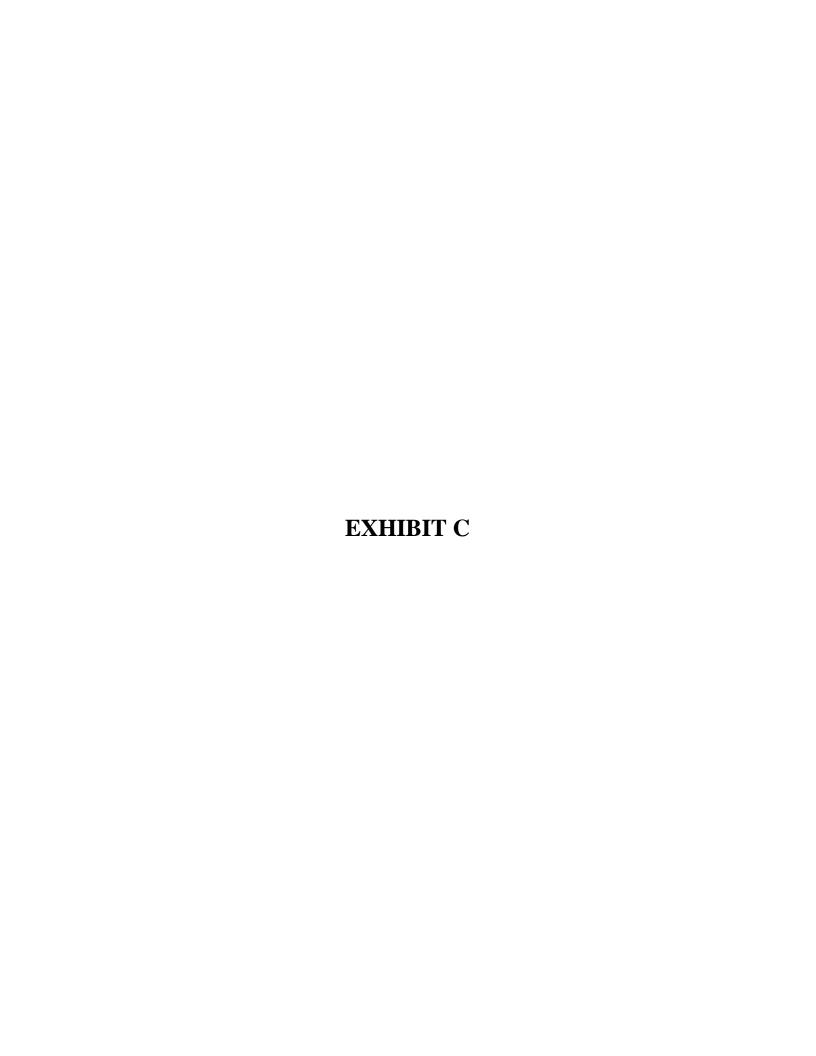
INTEROPERABILITY TESTS

There have been three interoperability testing events conducted by the industry and coordinated by the TTSI. GSM, TDMA and CDMA have been tested with the results being good for most scenarios. However, testing with certain PSAP equipment has yielded unusually high character error rates. Through ATIS coordination, the industry is working with the vendors of this equipment to resolve this issue. However, little time is available to identify and resolve problems and roll out the solution prior to the June 30, 2002 date. The success seen in mobile-to mobile and mobile to landline testing indicates that this TTY solution could provide access to a mobile conversational mode of communications for hearing impaired users. It will also lead to access to other digital modes of communications such as SMS and wireless Web. The industry is examining ways to introduce the conversational mode by June 30th, and continuing work (as needed) on resolution of the PSAP issue.

USER TESTING

Cingular is working with the Rehabilitation Engineering Research Center at Gallaudet University, a nationally recognized Deaf research organization specializing in Telecommunications access, to insure that the TTY solution is viable. These evaluations involve deaf individuals using the TTY products on a commercial switch to evaluate the network performance; usability of the interface to the wireless handset and the TTY terminal; and the customer service interface provided via TTY and TRS. Information obtained will be shared with the industry to insure a smooth service launch on or before June 30, 2002.

EXHIBIT C

MOTOROLA
TTY COMPATIBILITY DEVELOPMENT STATUS REPORT
2nd Quarter 2002

Product	Standard	Status	Milestones	Progress
CDMA Handset	IS 127-3 IS 733-2	Carrier deployment	IOT: June 2001 UI: October 2001 ROM: December 2001 SA: May 2002	Handset development work complete. V60i and V120c CDMA phones have been approved for shipment.
GSM Handset	TS 26.226 TS 26.230 TR 26.231	Carrier deployment	UI: October 2001 IOT: October 2001 ROM: January 2002 SA: July 2002	Handset development work complete. V60i GSM phone has been approved for shipment. P280i expected to be approved for shipment in July
iDEN Handset		Carrier deployment	Production handsets available to carriers.	Handset work complete.
TDMA Handset	IS 823-A IS 840-A	Carrier deployment	IOT: September 2001 UI: September 2001 ROM: October 2001 SA: April 2002	Handset development work complete. V60i and V120t TDMA phone has been approved for shipment.
CDMA Infrastructure	IS 127-3 IS 733-2	Carrier deployment	FOA Jan 02 Software release available	Carrier testing complete.
iDEN Infrastructure		Carrier deployment	Production software available to carriers	Infrastructure software available for carrier deployment.

Note: Motorola works with its carrier customers to provide them specific information related to their respective products.

Note: IOT is Inter Op Testing with RAM based parts for Character Error Rate testing
            UI is User Interface testing with HCO / VCO support
ROM is the availability of ROM based phones. These should be functionally identical to a RAM phone.
            SA is Ship Acceptance of production volume quantities

Rex Ellington
Product Safety & Compliance
Motorola – Personal Communications Sector
Phone: 815-884-4315

CERTIFICATE OF SERVICE

I, LaWanda Y. Tyson, a secretary with the law firm of Kurtis & Associates, P.C., do hereby certify that I have this 15th day of July 2002, filed the foregoing "REPORT TO THE FEDERAL COMMUNICATIONS COMMISSION ON CARRIER EFFORTS TOWARD ATTAINING DIGITAL TTY ACCESSIBILITY, AND THE STATUS OF THE VARIOUS TECHNOLOGICAL SOLUTIONS, AS PROVIDED BY CC DOCKET NO. 94-102, IN THE MATTER OF REVISION OF THE COMMISSION'S RULES TO ENSURE COMPATIBILITY WITH ENHANCED 911 EMERGENCY CALLING SYSTEMS" electronically with the Federal Communications Commission's Electronic Comment Filing System. I have also filed a copy of this report with the Federal Communications Commission's copy contractor, Qualex International. In addition, a copy of this report has been provided to Melinda Littell of the Commission's Wireless Telecommunications Bureau.

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/S/ LaWanda Y. Tyson
LaWanda Y. Tyson

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